



### **DoD Executive Agent**

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Environment

# **Work Smarter Not Harder: Utilizing an Environmental Management Information System to Meet Regulatory Compliance and Reporting Requirements for a Major Source Title V Facility.**

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# Fort Benning, Georgia

- Mission
  - Training
    - Infantry, Ranger, Airborne, Armor, and Officer Candidate Schools
  - Support to training and families
- Infrastructure and support facilities
  - Hospital, Hotel, Instructional space, Barracks, Dining Facilities, Administration Buildings, Warehouses.
- Population
  - 100,000+
  - 40,000+ vehicles daily
  - Soldiers, their Families, DA Civilians, Contractors, and Trainees.
- Base Realignment and Maneuver Center of Excellence
  - 113 construction or renovation projects

# Environmental Concerns

- Impacts from site operations
  - Training
  - Construction
- Policy implications
  - DoD
  - Federal and State
- Compliance concerns
  - Increasing and changing regulation
- Resource limitations
  - Personnel and funding
- Sustainability drivers

# Air Quality Compliance at Fort Benning

- Major Source under Prevention of Significant Deterioration (PSD)
  - New Source Performance Standards (NSPS)
- Major Source of Hazardous Air Pollutants (HAP)
  - National Emission Standard of Hazardous Air Pollutants (NESHAP)
- Part 70 Operating Permit (Title V)
- Title VI – Stratospheric Ozone Protection
- Greenhouse Gas (GHG) Mandatory Reporting Rule
- Executive Order 13514

# Fort Benning Air Program Objectives

- Compliance
  - Data collection
  - Record keeping
  - Reporting
- Planning
  - Construction projects
  - New equipment/ emissions sources
- EMS Metrics
  - Emissions reduction (VOC, GHG)
  - Fossil fuel use reductions
  - Alternative energy use

# Compliance Data Collection

- Multiple data sources
  - User
  - Operator
  - Energy or other program managers
  - Service contractors
- Various data reporting and collection methods
  - Spreadsheets
  - Monthly emails
  - Hand written notes or log sheets
  - Faxes

# Compliance Record Keeping and Reporting

- Multiple spreadsheets for record keeping
  - Minimum of three days per month for verification and entry
    - Requires manual data entry
    - Separated by source
    - Complied according to permit condition
    - Emissions calculations completed with formulas or macros
    - Verify and certify for compliance
- Reporting
  - Deviations or Excursions
  - Two, Semi-Annual Compliance Reports
  - Annual Compliance Certification
    - Multiple weeks to compile each compliance report



# Environmental Management Information System (EMIS)

- Ongoing Dem Val of EMIS (Enviance, in this case)
- Cloud Software as a Service (SaaS) computing
  - No software to purchase
  - No additional hardware required
- Increased data availability and transparency
- Uniform methods and techniques
- Flexibility to handle numerous programs
  - Air (Fort Benning)
  - Water/DMR (Fort Benning)
  - Hazardous Waste (Fort Carson)
  - EMS (Hawaii Garrison, West Virginia National Guard)

# Project Purpose

- Build a single, unified management and reporting system for compliance and planning
- Configure it specifically for Fort Benning
- Streamline Title V data collection, compliance management, and reporting
- Harmonize the emissions inventory estimating methodologies for Title V, PSD, GHG, and state emissions inventory reporting
- Develop a “What if” tool for project and new source analysis
- Improve compliance and reporting efficiency so resources could be allocated to EMS and Strategic Sustainability Performance Plan goals

# Challenges

- Fort Benning Title V Permit
  - Originally contained 128 conditions
    - 13 additional conditions added during the project
  - 9 source categories
  - Emissions and operating limits
    - Requires a number to demonstrate compliance
      - Fuel usage
      - Hours of operation
  - Required actions
    - Requires a task record to demonstrate compliance
      - Inspection report for opacity
      - Fuel delivery ticket review

# Challenges

- Emissions Harmonization
  - Heating and combustion units were particularly challenging
  - Inconsistent basis for calculating
    - State Air Emissions Inventory reported in lb/mmcf
    - Greenhouse Gas reported in kg/MMbtu
    - Prevention of Significant deterioration calculated in lb/hour
  - Need to make all calculations run off a single data point

Example: Monthly natural gas meter reading for Boiler #H008  
Reported by service contractor to Air Program as ccf.  
Must be converted to a different reporting unit depending on the requirements.

# Challenges

- Reporting
  - State does not have a set format for Semi-annual Title V compliance reporting but does for the Annual Report
    - Develop a format for the semi-annual that was similar to annual reporting, but enhanced to comply with state requests for supporting documentation and usage
  - GHG tool is as yet not released
  - Georgia is developing a new Air Emissions Inventory tool that is not fully released
    - Questions remain regarding what will actually be reported and how it will be formatted for each of the agencies

# Path of Progress

- Georgia EPD approval
  - Suggested report formatting
  - Basis for emissions limit calculations
- Link a single data point to numerous solutions and outputs
- Configure each source, permit condition and calculation methodology
- Format reports and outputs

# Title V Compliance Solution

- Each permit condition is incorporated
  - Fully described and structured
  - Pertinent source data is stored and available
- Task driven such that task completion satisfies recordkeeping requirements
- EMIS performs emissions calculations and compares results to conditions or limits
  - Emissions caps (e.g., 12-month rolling NOx sums)
  - Operating limits (e.g., 12 month rolling fuel use sums)
- Deviation reports are generated automatically
- Report output is formatted to meet State requirements

# Emissions Harmonization Solution

- Modified methodology to use the same physical basis for calculating emissions of PSD, TV, GHG, and EI reporting
- Aggregated insignificant sources, not specifically limited under TV, but reportable for PSD, GHG, and EI
- Built emissions calculations for each source category
  - Adding a new boiler or engine test cells is simplified
  - Setting up a source for PSD, structures it for GHG and EI at the same time
- Complete final reporting format once EPA and GA EPD release their final emissions reporting tools



# Final Outcomes

- A single, unified management and reporting system for compliance and planning
- Configured specifically for Fort Benning
- Streamlined Title V data collection, compliance management, and reporting
- Harmonized the emissions inventory estimating methodologies.
- Developed “What if” tool for project and new source analysis
- A single data entry supplies information to satisfy TV compliance, PSD, GHG, and State EI calculations.

# Cost Savings and Program Improvements

- Realized
  - Streamlined Title V compliance system creates efficiencies
    - Monthly data entry reduced from 3 days to a few hours
    - Report preparation reduced from several weeks to a few hours
  - Emissions Harmonization
    - FY11 funding released by Air Program (\$50K), not requested for FY12.
    - FY11 funding planned for PSD analysis being reallocated.
- Expected
  - Increased TV, PSD, GHG, and EI efficiencies result in better resource allocation for planning and EMS and SSPP improvements.



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